

Schedule Workshop 5

"Kinematic Aspects of Robotics"

April 29 - May 3, 2024

Organizer: Andreas Müller, Zijia Li

	Monday April 29	Tuesday April 30	Wednesday May 1	Thursday May 2	Friday May 3
09:00 - 10:00	Registration & Introduction	Zijia Li Kinematic Singularities of Robot Chains	Jon Selig The Geometry of the Adjoint Representation of SE(3)	Sylvain Calinon Geometric representations for robot manipulation skills acquisition	Marco Carricato Persistent Submanifolds of the Special Euclidean group SE(3)
10:00 - 11:00	Charles Wampler Finding overconstrained mechanisms via fiber products	Josef Schicho Explanations for Paradoxical Mobility	Peter Donelan What can algebraic invariants tell us about robot kinematics	Maria Alberich Carramiñana & Franco Coltraro Modelling inextensible textiles by geometrical constraints tailored to robotic manipulation	Abhilash Nayak Configuration space analysis of mechanisms using tropical geometry
11:00 - 11:30	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>	<i>Coffee Break</i>
11:30 - 12:30	Manfred Husty On two open kinematic problems	Mohab Safey Computer algebra in the service of robotics	Jean-Pierre Merlet Tools for non polynomial kinematics: interval analysis, continuation and neural networks	Pablo Lopez-Custodio Intrinsic on-manifold trajectory learning for robotics	Andreas Mueller Lie Bracketing for Investigating Singularities of holonomic and nonholonomic Robots
12:30 - 14:00	<i>Lunch Break</i>	<i>Lunch Break</i>	<i>Lunch Break</i>	<i>Lunch Break</i>	Wrap up session & Good-bye
14:00 - 15:00	Xianwen Kong Reconfiguration analysis and type synthesis of multi-mode parallel mechanisms	Mark Plecnik The Purposeful Placement of Singularities		Alba Perez Gracia 3D Shape characterization using superquadrics	
15:00 - 15:30	<i>Coffee Break</i>	<i>Coffee Break</i>	15:30 - 17:00 <i>Lentos Art Gallery</i>	<i>Coffee Break</i>	
15:30 - 16:30	Georg Nawratil A global approach for the redefinition of higher-order flexibility and rigidity	Durgesh Salunkhe Cuspidal robots: geometrical analysis and issues in path planning of 6R cobots		Mike McCarthy Quaternions in Kinematics	
	16:30 Reception	Participant presentations	18:30 <i>Dinner at Restaurant Klosterhof</i>	Participant presentations	